



SEQUENCE LISTING

<110> Georgopoulos, Katia  
Morgan, Bruce

<120> AIOLOS GENE

<130> 10287/031001

<140> US 09/019,348  
<141> 1998-02-05

<150> US 08/733,622  
<151> 1996-10-17

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gacattcaa	agtgggtcg	gaacccg	cactcg	gtgcttaaa	gcggccgcca	180					
gccagcgccg	ctctaacc	ccg	tgccggcggc	tccgc	cac	240					
gacgcgac	ccg	ggcctcc	gcgc	tc	tcg	300					
tccccacggc	agcagcac	ggagcggccg	cgagc	cc	gcg	360					
ggcccg	gac	gtg	ctg	aaa	agc	409					
Met	Glu	Asp	Ile	Gln	Pro	Thr	Val	Glu	Leu	Lys	Ser
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acg	gag	gag	cag	cct	ctg	ccc	aca	gag	agc	cca	gac	gct	ctg	aat	gac	457
Thr	Glu	Glu	Gln	Pro	Leu	Pro	Thr	Glu	Ser	Pro	Asp	Ala	Leu	Asn	Asp	
15	20	25														

tac	agc	ttg	ccc	aaa	cct	cat	gag	ata	gaa	aac	gtg	gac	agt	aga	gaa	505
Tyr	Ser	Leu	Pro	Lys	Pro	His	Glu	Ile	Glu	Asn	Val	Asp	Ser	Arg	Glu	
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gcc	cca	gcc	aat	gaa	gac	gaa	gat	gca	gga	gaa	gat	tcg	atg	aaa	gtg	553
Ala	Pro	Ala	Asn	Glu	Asp	Glu	Asp	Ala	Gly	Glu	Asp	Ser	Met	Lys	Val	
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aaa	gat	gaa	tac	agc	gac	aga	gat	gag	aac	att	atg	aag	ccg	gag	ccc	601
Lys	Asp	Glu	Tyr	Ser	Asp	Arg	Asp	Glu	Asn	Ile	Met	Lys	Pro	Glu	Pro	
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atg gga gat gca gaa gag agt gaa atg	cct tac agc tat gca aga gaa	649	
Met Gly Asp Ala Glu Glu Ser Glu Met	Pro Tyr Ser Tyr Ala Arg Glu		
80	85	90	
tac agc gac tat gaa agc att aag ctg	gag aga cac gtg ccc tat gac	697	
Tyr Ser Asp Tyr Glu Ser Ile Lys Leu	Glu Arg His Val Pro Tyr Asp		
95	100	105	
aac agc aga cca acc agt ggg aag atg	aac tgc gac gtg tgc ggg tta	745	
Asn Ser Arg Pro Thr Ser Gly Lys Met	Asn Cys Asp Val Cys Gly Leu		
110	115	120	
tcc tgc att agc ttc aac gtc ttg atg	cat aag cga agc cat acc	793	
Ser Cys Ile Ser Phe Asn Val Leu Met	Val His Lys Arg Ser His Thr		
125	130	135	140
ggc gaa cgc ccg ttc cag tgt aat cag	tgc ggg gca tct ttt act cag	841	
Gly Glu Arg Pro Phe Gln Cys Asn Gln	Cys Gly Ala Ser Phe Thr Gln		
145	150	155	
aaa ggt aac ctc ctc cgt cat att aaa	ctg cac acg ggg gaa aaa cct	889	
Lys Gly Asn Leu Leu Arg His Ile Lys	Leu His Thr Gly Glu Lys Pro		
160	165	170	
ttt aag tgt cac ctc tgc aac tac gca	tgc caa agg aga gat gcg ctc	937	
Phe Lys Cys His Leu Cys Asn Tyr Ala	Cys Gln Arg Arg Asp Ala Leu		
175	180	185	
acg gga cac ctt agg aca cat tct gtg	gag aag ccg tac aag tgt gag	985	
Thr Gly His Leu Arg Thr His Ser Val	Glu Lys Pro Tyr Lys Cys Glu		
190	195	200	
ttc tgc gga aga agc tac aag cag aga	agc tcc ctg gag gag cac aag	1033	
Phe Cys Gly Arg Ser Tyr Lys Gln Arg	Ser Ser Leu Glu Glu His Lys		
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gaa cgc tgc cga gct ttt ctt cag aac	cct gac ctg ggg gac gct gca	1081	
Glu Arg Cys Arg Ala Phe Leu Gln Asn	Pro Asp Leu Gly Asp Ala Ala		
225	230	235	
agt gtg gag gca aga cac atc aaa gcc	gag atg gga agt gag aga gct	1129	
Ser Val Glu Ala Arg His Ile Lys Ala	Glu Met Gly Ser Glu Arg Ala		
240	245	250	
ctc gtc ctg gac aga tta gca agc aat	gtg gct aag cga aaa agc tcg	1177	
Leu Val Leu Asp Arg Leu Ala Ser Asn	Val Ala Lys Arg Lys Ser Ser		
255	260	265	
atg cct cag aaa ttc atc ggt gag aag	cggtg cac tgc ttc gat gcc aac	1225	
Met Pro Gln Lys Phe Ile Gly Glu Lys	Arg His Cys Phe Asp Ala Asn		
270	275	280	
tac aat ccc ggc tac atg tac gag aag	gag aac gag atg atg cag acc	1273	
Tyr Asn Pro Gly Tyr Met Tyr Glu Lys	Glu Asn Glu Met Met Gln Thr		
285	290	295	300
cggtatgatg gac caa gcc atc aat aac	gcc atc agc tat cta ggg gct	1321	
Arg Met Met Asp Gln Ala Ile Asn Asn	Ala Ile Ser Tyr Leu Gly Ala		
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gaa gcc ttc cgc ccc tta gtc cag act	ccg cct gct ccc acc tct gag	1369	
Glu Ala Phe Arg Pro Leu Val Gln Thr	Pro Pro Ala Pro Thr Ser Glu		
320	325	330	
atg gtc cca gtc atc agc agt gtg tac	ccc ata gca ctt act cg <sup>g</sup> gcc	1417	
Met Val Pro Val Ile Ser Ser Val Tyr	Pro Ile Ala Leu Thr Arg Ala		
335	340	345	
gat atg cca atg ggg gcc ccg cag gag	atg gaa aag aaa cg <sup>g</sup> atc ctc	1465	
Asp Met Pro Met Gly Ala Pro Gln Glu	Met Glu Lys Lys Arg Ile Leu		
350	355	360	
ctg cca gag aag atc ttg cct tct gaa	cga ggt ctg tcc ccc aat aac	1513	
Leu Pro Glu Lys Ile Leu Pro Ser Glu	Arg Gly Leu Ser Pro Asn Asn		
365	370	375	380
agt gcc cag gac tcc aca gac acc gac	aac cac gag gat cg <sup>c</sup> caa	1561	
Ser Ala Gln Asp Ser Thr Asp Thr Asp	Ser Asn His Glu Asp Arg Gln		
385	390	395	
cat ctc tac cag caa agc cac gtg gtc	ctc ccc cag gcc cg <sup>c</sup> aat ggg	1609	
His Leu Tyr Gln Gln Ser His Val Val	Leu Pro Gln Ala Arg Asn Gly		
400	405	410	
atg cct ctt ctg aag gag gtc cct cg <sup>c</sup> tct ttt gaa	ctc ctc aag ccc	1657	
Met Pro Leu Leu Lys Glu Val Pro Arg Ser Phe Glu	Leu Leu Lys Pro		
415	420	425	
cct ccc atc tgc ctg agg gac tcc atc aaa gtg atc	aac aaa gaa ggg	1705	
Pro Pro Ile Cys Leu Arg Asp Ser Ile Lys Val Ile	Asn Lys Glu Gly		
430	435	440	
gag gtg atg gat gtg ttt cga tgt gac cac tgc cac	gtc ctc ttc cta	1753	
Glu Val Met Asp Val Phe Arg Cys Asp His Cys His	Val Leu Phe Leu		
445	450	455	460
gat tat gtg atg ttc acc atc cac atg ggg tgc cat	ggt ttc cgt gat	1801	
Asp Tyr Val Met Phe Thr Ile His Met Gly Cys His	Gly Phe Arg Asp		
465	470	475	
ccc ttt gag tgt aac atg tgt ggc tat cga agc cac	gat cg <sup>c</sup> tat gag	1849	
Pro Phe Glu Cys Asn Met Cys Gly Tyr Arg Ser His	Asp Arg Tyr Glu		
480	485	490	
tcc tcc tct cac atc gcc aga gga gag cac aga	gcc atg ttg aag	1894	
Phe Ser Ser His Ile Ala Arg Gly Glu His Arg Ala	Met Leu Lys		
495	500	505	
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     35                          40                          45  
 Glu Asp Glu Asp Ala Gly Glu Asp Ser Met Lys Val Lys Asp Glu Tyr  
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 Ser Asp Arg Asp Glu Asn Ile Met Lys Pro Glu Pro Met Gly Asp Ala  
     65                          70                          75                          80  
 Glu Glu Ser Glu Met Pro Tyr Ser Tyr Ala Arg Glu Tyr Ser Asp Tyr  
     85                          90                          95  
 Glu Ser Ile Lys Leu Glu Arg His Val Pro Tyr Asp Asn Ser Arg Pro  
     100                         105                         110  
 Thr Ser Gly Lys Met Asn Cys Asp Val Cys Gly Leu Ser Cys Ile Ser  
     115                         120                         125  
 Phe Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
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 Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu  
     145                         150                         155                          160  
 Leu Arg His Ile Lys Leu His Thr Gly Glu Lys Pro Phe Lys Cys His  
     165                         170                         175  
 Leu Cys Asn Tyr Ala Cys Gln Arg Arg Asp Ala Leu Thr Gly His Leu  
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 Arg Thr His Ser Val Glu Lys Pro Tyr Lys Cys Glu Phe Cys Gly Arg  
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 Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys Arg  
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 Ala Phe Leu Gln Asn Pro Asp Leu Gly Asp Ala Ala Ser Val Glu Ala  
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 Arg His Ile Lys Ala Glu Met Gly Ser Glu Arg Ala Leu Val Leu Asp  
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 Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys  
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 Phe Ile Gly Glu Lys Arg His Cys Phe Asp Ala Asn Tyr Asn Pro Gly  
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 Tyr Met Tyr Glu Lys Glu Asn Glu Met Met Gln Thr Arg Met Met Asp  
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 Gln Ala Ile Asn Asn Ala Ile Ser Tyr Leu Gly Ala Glu Ala Phe Arg  
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 Pro Leu Val Gln Thr Pro Pro Ala Pro Thr Ser Glu Met Val Pro Val  
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 Gly Ala Pro Gln Glu Met Glu Lys Lys Arg Ile Leu Leu Pro Glu Lys  
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 Ile Leu Pro Ser Glu Arg Gly Leu Ser Pro Asn Asn Ser Ala Gln Asp  
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 Ser Thr Asp Thr Asp Ser Asn His Glu Asp Arg Gln His Leu Tyr Gln  
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 Gln Ser His Val Val Leu Pro Gln Ala Arg Asn Gly Met Pro Leu Leu  
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 Lys Glu Val Pro Arg Ser Phe Glu Leu Leu Lys Pro Pro Pro Ile Cys  
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 Leu Arg Asp Ser Ile Lys Val Ile Asn Lys Glu Gly Glu Val Met Asp  
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 Val Phe Arg Cys Asp His Cys His Val Leu Phe Leu Asp Tyr Val Met  
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 Phe Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys  
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 Asn Met Cys Gly Tyr Arg Ser His Asp Arg Tyr Glu Phe Ser Ser His  
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gag cct gaa atc cct tac agc tat tca aga gaa tat aat gaa tat gaa 96  
 Glu Pro Glu Ile Pro Tyr Ser Tyr Ser Arg Glu Tyr Asn Glu Tyr Glu  
 20 25 30

aac att aag ttg gag aga cat gtt gtc tca ttc gat agt agc agg cca 144  
 Asn Ile Lys Leu Glu Arg His Val Val Ser Phe Asp Ser Ser Arg Pro  
 35 40 45

acc agt gga aag atg aac tgc gat gtg tgt gga tta tcc tgc atc agc 192  
 Thr Ser Gly Lys Met Asn Cys Asp Val Cys Gly Leu Ser Cys Ile Ser  
 50 55 60

ttc aat gtc tta atg gtt cat aag cga agc cat act ggt gaa cgc cca 240  
 Phe Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
 65 70 75 80

ttc cag tgt aat cag tgt ggg gca tct ttt act cag aaa ggt aac ctc Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu 85 90 95	288
ctc cgc cac att aaa ctg cac aca ggg gaa aaa cct ttt aag tgt cac Leu Arg His Ile Lys Leu His Thr Gly Glu Lys Pro Phe Lys Cys His 100 105 110	336
ctc tgc aac tat gca tgc caa aga aga gat gcg ctc acg ggg cat ctt Leu Cys Asn Tyr Ala Cys Gln Arg Arg Asp Ala Leu Thr Gly His Leu 115 120 125	384
agg aca cat tct gtg gag aaa ccc tac aaa tgt gag ttt tgt gga agg Arg Thr His Ser Val Glu Lys Pro Tyr Lys Cys Glu Phe Cys Gly Arg 130 135 140	432
agt tac aag cag aga agt tcc ctt gag gag cac aag gag cgc tgc cgt Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys Arg 145 150 155 160	480
aca ttt ctt cag agc act gac cca ggg gac act gca agt gcg gag gca Thr Phe Leu Gln Ser Thr Asp Pro Gly Asp Thr Ala Ser Ala Glu Ala 165 170 175	528
aga cac atc aaa gca gag atg gga agt gaa aga gct ctc gta ctg gac Arg His Ile Lys Ala Glu Met Gly Ser Glu Arg Ala Leu Val Leu Asp 180 185 190	576
aga tta gca agc aat gtg gca aaa cga aaa agc tca atg cct cag aaa Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys 195 200 205	624
ttc a Phe	628

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			20					25					30		
Asn	Ile	Lys	Leu	Glu	Arg	His	Val	Val	Ser	Phe	Asp	Ser	Ser	Arg	Pro
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Thr	Ser	Gly	Lys	Met	Asn	Cys	Asp	Val	Cys	Gly	Leu	Ser	Cys	Ile	Ser
						55					60				
Phe	Asn	Val	Leu	Met	Val	His	Lys	Arg	Ser	His	Thr	Gly	Glu	Arg	Pro
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Phe	Gln	Cys	Asn	Gln	Cys	Gly	Ala	Ser	Phe	Thr	Gln	Lys	Gly	Asn	Leu
					85				90				95		
Leu	Arg	His	Ile	Lys	Leu	His	Thr	Gly	Glu	Lys	Pro	Phe	Lys	Cys	His
					100			105					110		
Leu	Cys	Asn	Tyr	Ala	Cys	Gln	Arg	Arg	Asp	Ala	Leu	Thr	Gly	His	Leu
					115			120				125			
Arg	Thr	His	Ser	Val	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	Phe	Cys	Gly	Arg
					130		135				140				
Ser	Tyr	Lys	Gln	Arg	Ser	Ser	Leu	Glu	Glu	His	Lys	Glu	Arg	Cys	Arg
					145		150				155				160

Thr Phe Leu Gln Ser Thr Asp Pro Gly Asp Thr Ala Ser Ala Glu Ala  
165 170 175  
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Phe

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gag ggt caa gac atg tcc caa gtt tca gga aag gag agc ccc cca gtc Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val 5 10 15 20	282
agt gac act cca gat gaa ggg gat gag ccc atg cct gtc cct gag gac Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp 25 30 35	330
ctg tcc act acc tct gga gca cag cag aac tcc aag agt gat cga ggc Leu Ser Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly 40 45 50	378
atg ggt gaa cgg cct ttc cag tgc aac cag tct ggg gcc tcc ttt acc Met Gly Glu Arg Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr 55 60 65	426
cag aaa ggc aac ctc ctg cgg cac atc aag ctg cac tcg ggt gag aag Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys 70 75 80	474
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ctc acc ggc cac ctg agg acg cac tcc gtt ggt aag cct cac aaa tgt Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys Pro His Lys Cys 105 110 115	570
gga tat tgt ggc cgg agc tat aaa cag cga agc tct tta gag gag cat Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His 120 125 130	618
aaa gag cga tgc cac aac tac ttg gaa agc atg ggc ctt ccg ggc gtg Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val 135 140 145	666
tgc cca gtc att aag gaa gaa act aac cac aac gag atg gca gaa gac Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp 150 155 160	714
ctg tgc aag ata gga gca gag agg tcc ctt gtc ctg gac agg ctg gca Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala 165 170 175 180	762
agc aat gtc gcc aaa cgt aag agc tct atg cct cag aaa ttt ctt gga Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly 185 190 195	810

gac aag tgc ctg tca gac atg ccc tat gac agt gcc aac tat gag aag	858
Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys	
200 205 210	
gag gat atg atg aca tcc cac gtg atg gac cag gcc atc aac aat gcc	906
Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala	
215 220 225	
atc aac tac ctg ggg gct gag tcc ctg cgc cca ttg gtg cag aca ccc	954
Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro	
230 235 240	
ccc ggt agc tcc gag gtg cca gtc atc agc tcc atg tac cag ctg	1002
Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu	
245 250 255 260	
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His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln	
265 270 275	
gac gcc gtg gat aac ttg ctg ctg tcc aag gcc aag tct gtg tca	1098
Asp Ala Val Asp Asn Leu Leu Leu Ser Lys Ala Lys Ser Val Ser	
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Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp	
295 300 305	
aca gag agc aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc	1194
Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr	
310 315 320	
aac cac atc aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag	1242
Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu	
325 330 335 340	
cag cgc gcc tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat	1290
Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp	
345 350 355	
gcc ttc cgt gtg gtc agc acg agt ggc gag cag ctg aag gtg tac aag	1338
Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys	
360 365 370	
tgc gaa cac tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att	1386
Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile	
375 380 385	
cac atg ggc tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt	1434
His Met Gly Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys	
390 395 400	
aac atg tgt ggt tat cac agc cag gac agg tac gag ttc tca tcc cat	1482
Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His	
405 410 415 420	
atc acg cgg ggg gag cat cgt tac cac ctg agc taaaaccac caggccccac	1535
Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser	
425 430	
tgaagcacaa agatagctgg ttatgcctcc ttccggcag ctggaccac agcggacaat	1595
gtggagtggtt atttcagggc agcatttgtt ctttatgtt ggttggg cgtttcattt	1655

gcgttggaaat aatgttagtgc acaggattgc attgcatacg caacattcac 1715  
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 <221> CDS  
 <222> (1)...(1383)

<400> 16

aat gtt aaa gta gag act cag agt gat gaa gag aat ggg cgt gcc tgt Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly Arg Ala Cys 1 5 10 15	48
gaa atg aat ggg gaa gaa tgt gcg gag gat tta cga atg ctt gat gcc Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala 20 25 30	96
tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc agc tcg gct Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala 35 40 45	144
ttg tcg gga gtt gga ggc att cga ctt cct aac gga aaa cta aag tgt Leu Ser Gly Val Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys 50 55 60	192
gat atc tgt ggg atc att tgc atc ggg ccc aat gtg ctc atg gtt cac Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His 65 70 75 80	240
aaa aga agc cac act gga gaa cgg ccc ttc cag tgc aat cag tgc ggg Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly 85 90 95	288
gcc tca ttc acc cag aag ggc aac ctg ctc cgg cac atc aag ctg cat Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His 100 105 110	336
tcc ggg gag aag ccc ttc aaa tgc cac ctc tgc aac tac gcc tgc cgc Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg 115 120 125	384
cggttggaaat aatgttagtgc acaggattgc attgcatacg caacattcac 1715 aacatccatc cttctagcca gttttgtca ctggtagctg aggtttcccg gatatgtggc 1775 ttcctaacac tct 1788	432
cct cac aaa tgt gga tat tgt ggc cga agc tat aaa cag cga acg tct Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser 145 150 155 160	480
tta gag gaa cat aaa gag cgc tgc cac aac tac ttg gaa agc atg ggc Leu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly 165 170 175	528
ctt ccg ggc aca ctg tac cca gtc att aaa gaa gaa act aag cac agt Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser 180 185 190	576

gaa atg gca gaa gac ctg tgc	aag ata gga tca gag aga tct ctc gtg	624	
Glu Met Ala Glu Asp Leu Cys	Lys Ile Gly Ser Glu Arg Ser Leu Val		
195	200	205	
ctg gac aga cta gca agt aat	gtc gcc aaa cgt aag agc tct atg cct	672	
Leu Asp Arg Leu Ala Ser Asn	Val Ala Lys Arg Lys Ser Ser Met Pro		
210	215	220	
cag aaa ttt ctt ggg gac aag	ggc ctg tcc gac acg ccc tac gac agt	720	
Gln Lys Phe Leu Gly Asp Lys	Gly Leu Ser Asp Thr Pro Tyr Asp Ser		
225	230	235	240
gcc acg tac gag aag gag aac	gaa atg atg aag tcc cac gtg atg gac	768	
Ala Thr Tyr Glu Lys Glu Asn	Glu Met Met Lys Ser His Val Met Asp		
245	250	255	
caa gcc atc aac aac gcc atc	aac tac ctg ggg gcc gag tcc ctg cgc	816	
Gln Ala Ile Asn Asn Ala Ile	Tyr Leu Gly Ala Glu Ser Leu Arg		
260	265	270	
ccg ctg gtg cag acg ccc ccg	ggc ggt tcc gag gtg gtc ccg gtc atc	864	
Pro Leu Val Gln Thr Pro Pro	Gly Gly Ser Glu Val Val Pro Val Ile		
275	280	285	
agc ccg atg tac cag ctg cac	agg cgc tcg gag ggc acc ccg cgc tcc	912	
Ser Pro Met Tyr Gln Leu His	Arg Arg Ser Glu Gly Thr Pro Arg Ser		
290	295	300	
aac cac tcg gcc cag gac agc	gcc gtg gag tac ctg ctg ctg ctc tcc	960	
Asn His Ser Ala Gln Asp Ser	Ala Val Glu Tyr Leu Leu Leu Ser		
305	310	315	320
aag gcc aag ttg gtg ccc tcg	gag cgc gag gcg tcc ccg agc aac agc	1008	
Lys Ala Lys Leu Val Pro Ser	Glu Arg Glu Ala Ser Pro Ser Asn Ser		
325	330	335	
tgc caa gac tcc acg gac acc	gag agc aac aac gag gag cag cgc agc	1056	
Cys Gln Asp Ser Thr Asp Thr	Glu Ser Asn Asn Glu Glu Gln Arg Ser		
340	345	350	
ggt ctt atc tac ctg acc aac	cac atc gcc cga cgc gcg caa cgc gtg	1104	
Gly Leu Ile Tyr Leu Thr Asn	His Ile Ala Arg Arg Ala Gln Arg Val		
355	360	365	
tcg ctc aag gag gag cac cgc	gcc tac gac ctg ctg cgc gcc tcc	1152	
Ser Leu Lys Glu Glu His Arg	Ala Tyr Asp Leu Leu Arg Ala Ala Ser		
370	375	380	
gag aac tcg cag gac gcg ctc	cgc gtc agc acc agc ggg gag cag	1200	
Glu Asn Ser Gln Asp Ala Leu	Arg Val Val Ser Thr Ser Gly Glu Gln		
385	390	395	400
atg aag gtg tac aag tgc gaa	cac cac tgc ttc ctg gat cac	1248	
Met Lys Val Tyr Lys Cys Glu	His Cys Arg Val Leu Phe Leu Asp His		
405	410	415	
gtc atg tac acc atc cac atg	ggc ttc cgt gat cct ttt	1296	
Val Met Tyr Thr Ile His Met	Gly Cys His Gly Phe Arg Asp Pro Phe		
420	425	430	

gag tgc aac atg tgc ggc tac cac agc cag gac cg<sub>g</sub> tac gag ttc tcg      1344  
 Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser  
 435                          440                          445  
  
 tcg cac ata acg cga ggg gag cac cgc ttc cac atg agc taa      1386  
 Ser His Ile Thr Arg Gly Glu His Arg Phe His M t Ser  
 450                          455                          460

<210> 17  
 <211> 1296  
 <212> DNA  
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<220>  
 <221> CDS  
 <222> (1)...(1296)

<400> 17

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Met	Asp	Val	Asp	Glu	Gly	Gln	Asp	Met	Ser	Gln	Val	Ser	Gly	Lys	Glu		
1								5		10				15			

agc	ccc	cca	gtc	agt	gac	act	cca	gat	gaa	ggg	gat	gag	ccc	atg	cct		96
Ser	Pro	Pro	Val	Ser	Asp	Thr	Pro	Asp	Glu	Gly	Asp	Glu	Pro	Met	Pro		
								20		25				30			

gtc	cct	gag	gac	ctg	tcc	act	acc	tct	gga	gca	cag	cag	aac	tcc	aag		144
Val	Pro	Glu	Asp	Leu	Ser	Thr	Thr	Ser	Gly	Ala	Gln	Gln	Asn	Ser	Lys		
								35		40				45			

agt	gat	cga	ggc	atg	gcc	agt	aat	gtt	aaa	gta	gag	act	cag	agt	gat		192
Ser	Asp	Arg	Gly	Met	Ala	Ser	Asn	Val	Lys	Val	Glu	Thr	Gln	Ser	Asp		
								50		55				60			

gaa	gag	aat	ggg	cgt	gcc	tgt	gaa	atg	aat	ggg	gaa	gaa	tgt	gca	gag		240
Glu	Glu	Asn	Gly	Arg	Ala	Cys	Glu	Met	Asn	Gly	Glu	Glu	Cys	Ala	Glu		
								65		70				75			

gat	tta	cga	atg	ctt	gat	gcc	tcg	gga	gag	aaa	atg	aat	ggc	tcc	cac		288
Asp	Leu	Arg	Met	Leu	Asp	Ala	Ser	Gly	Glu	Lys	Met	Asn	Gly	Ser	His		
								85		90				95			

agg	gac	caa	ggc	agc	tcg	gct	ttg	tca	gga	gtt	gga	ggc	att	cga	ctt		336
Arg	Asp	Gln	Gly	Ser	Ser	Ala	Leu	Ser	Gly	Val	Gly	Gly	Ile	Arg	Leu		
								100		105				110			

cct	aac	gga	aaa	cta	aag	tgt	gat	atc	tgt	ggg	atc	gtt	tgc	atc	ggg		384
Pro	Asn	Gly	Lys	Leu	Lys	Cys	Asp	Ile	Cys	Gly	Ile	Val	Cys	Ile	Gly		
								115		120				125			

ccc	aat	gtg	ctc	atg	gtt	cac	aaa	aga	agt	cat	act	ggt	gaa	cg <sub>g</sub>	cct		432
Pro	Asn	Val	Leu	Met	Val	His	Lys	Arg	Ser	His	Thr	Gly	Glu	Arg	Pro		
								130		135				140			

ttc	cag	tgc	aac	cag	tct	ggg	gcc	tcc	ttt	acc	cag	aaa	ggc	aac	ctc		480
Phe	Gln	Cys	Asn	Gln	Ser	Gly	Ala	Ser	Phe	Thr	Gln	Lys	Gly	Asn	Leu		
								145		150				155			

ctg	cg <sub>g</sub>	cac	atc	aag	ctg	cac	tcg	ggt	gag	aag	ccc	ttc	aaa	tgc	cat		528
Leu	Arg	His	Ile	Lys	Leu	His	Ser	Gly	Glu	Lys	Pro	Phe	Lys	Cys	His		
								165		170				175			

ctt tgc aac tat gcc tgc cgc cgg agg gac gcc ctc acc ggc cac ctg	576
Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu	
180 185 190	
agg acg cac tcc gga gac aag tgc ctg tca gac atg ccc tat gac agt	624
Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser	
195 200 205	
gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg gac cag	672
Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln	
210 215 220	
gcc atc aac aat gcc atc aac tac ctg ggg gct gag tcc ctg cgc cca	720
Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro	
225 230 235 240	
ttg gtg cag aca ccc ccc ggt agc tcc gag gtg gtg cca gtc atc agc	768
Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser	
245 250 255	
tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca cggt tcc	816
Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser	
260 265 270	
aac cat tca gca cag gac gcc gtg gat aac ttg ctg ctg tcc aag	864
Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys	
275 280 285	
gcc aag tct gtg tca tcg gag cga gag gcc tcc ccg agc aac agc tgc	912
Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys	
290 295 300	
caa gac tcc aca gat aca gag agc aac gcg gag gaa cag cgc agc ggc	960
Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly	
305 310 315 320	
ctt atc tac cta acc aac cac atc aac ccg cat gca cgc aat ggg ctg	1008
Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu	
325 330 335	
gct ctc aag gag gag cag cgc gcc tac gag gtg ctg agg gcg gcc tca	1056
Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser	
340 345 350	
gag aac tcg cag gat gcc ttc cgt gtg gtc agc acg agt ggc gag cag	1104
Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln	
355 360 365	
ctg aag gtg tac aag tgc gaa cac tgc cgc gtg ctc ttc ctg gat cac	1152
Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His	
370 375 380	
gtc atg tat acc att cac atg ggc tgc cat ggc tgc cat ggc ttt cgg	1200
Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg	
385 390 395 400	
gat ccc ttt gag tgt aac atg tgt ggt tat cac agc cag gac agg tac	1248
Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr	
405 410 415	

gag ttc tca tcc cat atc acg cg<sub>g</sub> gag cat cgt tac cac ctg agc 1296  
 Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser  
 420 425 430

<210> 18  
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 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (223)...(1776)

<400> 18

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ccactcagag ggactcaga gcaagtttag atttgtgtgg cagagagaga cagctctcgat	180
ttggccttgg ggaggcacaa gtctgttat aacctgaaga ca atg gat gtc gat	234
Met Asp Val Asp	
1	

gag ggt caa gac atg tcc caa gtt tca gga aag gag agc ccc cca gtc 282  
 Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val  
 5 10 15 20

agt gac act cca gat gaa ggg gat gag ccc atg cct gtc cct gag gac 330  
 Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp  
 25 30 35

ctg tcc act acc tct gga gca cag cag aac tcc aag agt gat cga ggc 378  
 Leu Ser Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly  
 40 45 50

atg gcc agt aat gtt aaa gta gag act cag agt gat gaa gag aat ggg 426  
 Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly  
 55 60 65

cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag gat tta cga atg 474  
 Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met  
 70 75 80

ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc 522  
 Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly  
 85 90 95 100

agc tcg gct ttg tca gga gtt gga ggc att cga ctt cct aac gga aaa 570  
 Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys  
 105 110 115

cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg ccc aat gtg ctc 618  
 Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly Pro Asn Val Leu  
 120 125 130

atg gtt cac aaa aga agt cat act ggt gaa cgg cct ttc cag tgc aac 666  
 Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn  
 135 140 145

cag tct ggg gcc tcc ttt acc cag aaa ggc aac ctc ctg cgg cac atc 714  
 Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile  
 150 155 160

aag ctg cac tcg ggt gag aag ccc ttc aaa tgc cat ctt tgc aac tat		762
Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr		
165 170 175 180		
gcc tgc cgc cg agg gac gcc ctc acc ggc cac ctg agg acg cac tcc		810
Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser		
185 190 195		
gtt ggt aag cct cac aaa tgt gga tat tgt ggc cg agg acg tat aaa cag		858
Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln		
200 205 210		
cga agc tct tta gag gag cat aaa gag cga tgc cac aac tac ttg gaa		906
Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu		
215 220 225		
agc atg ggc ctt ccg ggc gtg tgc cca gtc att aag gaa gaa act aac		954
Ser Met Gly Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn		
230 235 240		
cac aac gag atg gca gaa gac ctg tgc aag ata gga gca gag agg tcc		1002
His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser		
245 250 255 260		
ctt gtc ctg gac agg ctg gca agc aat gtc gcc aaa cgt aag agc tct		1050
Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser		
265 270 275		
atg cct cag aaa ttt ctt gga gac aag tgc ctg tca gac atg ccc tat		1098
Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr		
280 285 290		
gac agt gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg		1146
Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met		
295 300 305		
gac cag gcc atc aac aat gcc atc aac tac ctg ggg gct gag tcc ctg		1194
Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu		
310 315 320		
cgc cca ttg gtg cag aca ccc ccc ggt agc tcc gag gtg gtg cca gtc		1242
Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val		
325 330 335 340		
atc agc tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca		1290
Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro		
345 350 355		
cg g tcc aac cat tca gca cag gac gcc gtg gat aac ttg ctg ctg ctg		1338
Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu		
360 365 370		
tcc aag gcc aag tct gtg tca tcg gag cga gag gcc tcc ccg agc aac		1386
Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn		
375 380 385		
agc tgc caa gac tcc aca gat aca gag agc aac gcg gag gaa cag cgc		1434
Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg		
390 395 400		

agc ggc ctt atc tac cta acc aac cac atc aac ccg cat gca cgc aat Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn 405 410 415 420	1482
ggg ctg gct ctc aag gag gag cag cgc gcc tac gag gtg ctg agg gcg Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala 425 430 435	1530
gcc tca gag aac tcg cag gat gcc ttc cgt gtg gtc agc acg agt ggc Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly 440 445 450	1578
gag cag ctg aag gtg tac aag tgc gaa cac tgc cgc gtg ctc ttc ctg Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu 455 460 465	1626
gat cac gtc atg tat acc att cac atg ggc tgc cat ggc tgc cat ggc Asp His Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly 470 475 480	1674
ttt cgg gat ccc ttt gag tgt aac atg tgt ggt tat cac agc cag gac Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp 485 490 495 500	1722
agg tac gag ttc tca tcc cat atc acg cgg ggg gag cat cgt tac cac Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His 505 510 515	1770
ctg agc taaaaccac caggccccac tgaaggcacaa agatagctgg ttatgcctcc Leu Ser	1826
ttcccccac ctggacccac agcggacaat gtgggagtgg atttgcagggc agcattttgtt cttttatgtt ggttgtttgg cgtttcattt gcgttggaaag ataagtttt aatgttagtg acaggattgc attgcatacg caacattcac aacatccatc cttctagcca gttttgttca ctggtagctg aggtttcccg gatatgtggc ttccctaacac tct	1886 1946 2006 2049
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agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro 20 25 30	96
gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys 35 40 45	144
agt gat cga ggc atg ggt gaa cgg cct ttc cag tgc aac cag tct ggg Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly 50 55 60	192

gcc tcc ttt acc cag aaa ggc	aac ctc ctg cgg cac atc aag ctg cac	240
Ala Ser Phe Thr Gln Lys Gly	Asn Leu Leu Arg His Ile Lys Leu His	
65 70	75 80	
tcg ggt gag aag ccc ttc aaa tgc cat ctt tgc aac tat gcc tgc cgc		288
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg		
85 90	95	
cgg agg gac gcc ctc acc ggc cac ctg agg acg cac tcc gtc att aag		336
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Ile Lys		
100 105	110	
gaa gaa act aac cac aac gag atg gca gaa gac ctg tgc aag ata gga		384
Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly		
115 120	125	
gca gag agg tcc ctt gtc ctg gac agg ctg gca agc aat gtc gcc aaa		432
Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys		
130 135	140	
cgt aag agc tct atg cct cag aaa ttt ctt gga gac aag tgc ctg tca		480
Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser		
145 150	155 160	
gac atg ccc tat gac agt gcc aac tat gag aag gag gat atg atg aca		528
Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr		
165 170	175	
tcc cac gtg atg gac cag gcc atc aac aat gcc atc aac tac ctg ggg		576
Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly		
180 185	190	
gct gag tcc ctg cgc cca ttg gtg cag aca ccc ccc ggt agc tcc gag		624
Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu		
195 200	205	
gtg gtg cca gtc atc agc tcc atg tac cag ctg cac aag ccc ccc tca		672
Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser		
210 215	220	
gat ggc ccc cca cgg tcc aac cat tca gca cag gac gcc gtg gat aac		720
Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn		
225 230	235 240	
ttg ctg ctg tcc aag gcc aag tct gtg tca tcg gag cga gag gcc		768
Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala		
245 250	255	
tcc ccg agc aac agc tgc caa gac tcc aca gat aca gag agc aac gcg		816
Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala		
260 265	270	
gag gaa cag cgc agc ggc ctt atc tac cta acc aac cac atc aac ccg		864
Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro		
275 280	285	
cat gca cgc aat ggg ctg gct ctc aag gag gag cag cgc gcc tac gag		912
His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu		
290 295	300	

gtg ctg agg gcc tca gag aac tcg cag gat gcc ttc cgt gtg gtc	960
Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val	
305 310 315 320	
agc acg agt ggc gag cag ctg aag gtg tac aag tgc gaa cac tgc cgc	1008
Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg	
325 330 335	
gtg ctc ttc ctg gat cac gtc atg tat acc att cac atg ggc tgc cat	1056
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His	
340 345 350	
ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt aac atg tgt ggt tat	1104
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr	
355 360 365	
cac agc cag gac agg tac gag ttc tca tcc cat atc acg cgg ggg gag	1152
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu	
370 375 380	
cat cgt tac cac ctg agc	1170
His Arg Tyr His Leu Ser	
385 390	
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Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu	
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 agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct	96
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro	
20 25 30	
 gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag	144
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys	
35 40 45	
 agt gat cga ggc atg gcc agt aat gtt aaa gta gag act cag agt gat	192
Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp	
50 55 60	
 gaa gag aat ggg cgt gcc tgg gaa atg aat ggg gaa gaa tgt gca gag	240
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu	
65 70 75 80	
 gat tta cga atg ctt gat gcc tgg gga gag aaa atg aat ggc tcc cac	288
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His	
85 90 95	

agg gac caa ggc agc tcg gct ttg tca gga gtt gga ggc att cga ctt		336	
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu			
100	105	110	
cct aac gga aaa cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg		384	
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly			
115	120	125	
ccc aat gtg ctc atg gtt cac aaa aga agt cat act gga gac aag tgc		432	
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Asp Lys Cys			
130	135	140	
ctg tca gac atg ccc tat gac agt gcc aac tat gag aag gag gat atg		480	
Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met			
145	150	155	160
atg aca tcc cac gtg atg gac cag gcc atc aac aat gcc atc aac tac		528	
Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr			
165	170	175	
ctg ggg gct gag tcc ctg cgc cca ttg gtg cag aca ccc ccc ggt agc		576	
Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser			
180	185	190	
tcc gag gtg gtg cca gtc atc agc tcc atg tac cag ctg cac aag ccc		624	
Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro			
195	200	205	
ccc tca gat ggc ccc cca cgg tcc aac cat tca gca cag gac gcc gtg		672	
Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val			
210	215	220	
gat aac ttg ctg ctg tcc aag gcc aag tct gtg tca tcg gag cga		720	
Asp Asn Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg			
225	230	235	240
gag gcc tcc ccg agc aac agc tgc caa gac tcc aca gat aca gag agc		768	
Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser			
245	250	255	
aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc aac cac atc		816	
Asn Ala Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile			
260	265	270	
aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag cag cgc gcc		864	
Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Gln Arg Ala			
275	280	285	
tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat gcc ttc cgt		912	
Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg			
290	295	300	
gtg gtc agc acg agt ggc gag cag ctg aag gtg tac aag tgc gaa cac		960	
Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His			
305	310	315	320
tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att cac atg ggc		1008	
Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly			
325	330	335	

tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt aac atg tgt Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys 340 345 350	1056
ggt tat cac agc cag gag agg tac gag ttc tca tcc cat atc acg cgg Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg 355 360 365	1104
ggg gag cat cgt tac cac ctg agc Gly Glu His Arg Tyr His Leu Ser 370 375	1128
<210> 21	
<211> 1004	
<212> DNA	
<213> Mus musculus	
<220>	
<221> CDS	
<222> (1)...(1002)	
<400> 21	
gga gaa cgg ccc ttc cag tgc aat cag tgc ggg gcc tca ttc acc cag Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln 1 5 10 15	48
aag ggc aac ctg ctc cgg cac atc aag ctg cat tcc ggg gag aag ccc Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro 20 25 30	96
ttc aaa tgc cac ctc tgc aac tac gcc tgc cgc cgg agg gac gcc ctc Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu 35 40 45	144
act ggc cac ctg agg acg cac tcc gtc att aaa gaa gaa act aag cac Thr Gly His Leu Arg Thr His Ser Val Ile Lys Glu Glu Thr Lys His 50 55 60	192
agt gaa atg gca gaa gac ctg tgc aag ata gga tca gag aga tct ctc Ser Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu 65 70 75 80	240
gtg ctg gac aga cta gca agt aat gtc gcc aaa cgt aag agc tct atg Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met 85 90 95	288
cct cag aaa ttt ctt ggg gac aag ggc ctg tcc gac acg ccc tac gac Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp 100 105 110	336
agt gcc acg tac gag aag gag aac gaa atg atg aag tcc cac gtg atg Ser Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met 115 120 125	384
gac caa gcc atc aac aac gcc atc aac tac ctg ggg gcc gag tcc ctg Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu 130 135 140	432
cgc ccg ctg gtg cag acg ccc ccg ggc ggt tcc gag gtg gtc ccg gtc Arg Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val 145 150 155 160	480

atc agc ccg atg tac cag ctg cac	agg cgc tcg gag ggc acc ccg cgc	528	
Ile Ser Pro Met Tyr Gln Leu His	Arg Arg Ser Glu Gly Thr Pro Arg		
165	170	175	
tcc aac cac tcg gcc cag gac agc	gcc gtg gag tac ctg ctg ctg ctc	576	
Ser Asn His Ser Ala Gln Asp Ser	Ala Val Glu Tyr Leu Leu Leu		
180	185	190	
tcc aag gcc aag ttg gtg ccc tcg	gag cgc gag gcg tcc ccg agc aac	624	
Ser Lys Ala Lys Leu Val Pro Ser	Glu Arg Glu Ala Ser Pro Ser Asn		
195	200	205	
agc tgc caa gac tcc acg gac acc	gag agc aac aac gag gag cag cgc	672	
Ser Cys Gln Asp Ser Thr Asp Thr	Glu Ser Asn Asn Glu Glu Gln Arg		
210	215	220	
agc ggt ctt atc tac ctg acc aac	cac atc gcc cga cgc gcg caa cgc	720	
Ser Gly Leu Ile Tyr Leu Thr Asn His	Ile Ala Arg Arg Ala Gln Arg		
225	230	235	240
gtg tcg ctc aag gag gag cac cgc	gcc tac gac ctg ctg cgc gcc gcc	768	
Val Ser Leu Lys Glu Glu His Arg	Ala Tyr Asp Leu Leu Arg Ala Ala		
245	250	255	
tcc gag aac tcg cag gac gcg ctc	cgc gtg gtc agc acc agc ggg gag	816	
Ser Glu Asn Ser Gln Asp Ala Leu	Arg Val Val Ser Thr Ser Gly Glu		
260	265	270	
cag atg aag gtg tac aag tgc gaa	cac tgc cgg gtg ctc ttc ctg gat	864	
Gln Met Lys Val Tyr Lys Cys Glu	His Cys Arg Val Leu Phe Leu Asp		
275	280	285	
cac gtc atg tac acc atc cac atg	ggc tgc cac ggc ttc cgt gat cct	912	
His Val Met Tyr Thr Ile His Met	Gly Cys His Gly Phe Arg Asp Pro		
290	295	300	
ttt gag tgc aac atg tgc ggc tac	cac agc cag gac cgg tac gag ttc	960	
Phe Glu Cys Asn Met Cys Gly Tyr	His Ser Gln Asp Arg Tyr Glu Phe		
305	310	315	320
tcg tcg cac ata acg cga ggg gag	cac cgc ttc cac atg agc	1002	
Ser Ser His Ile Thr Arg Gly Glu	His Arg Phe His Met Ser		
325	330		
ta		1004	

<210> 22  
 <211> 470  
 <212> PRT  
 <213> Mus musculus

<220>  
 <221> VARIANT  
 <222> (1)...(470)  
 <223> Xaa = Any Amino Acid

<400> 22  
 Xaa Xaa Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn  
 1 5 10 15

<210> 23  
<211> 334

<212> PRT  
<213> Mus musculus

<400> 23

Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln  
1 5 10 15  
Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro  
20 25 30  
Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu  
35 40 45  
Thr Gly His Leu Arg Thr His Ser Val Ile Lys Glu Glu Thr Lys His  
50 55 60  
Ser Glu Met Ala Glu Asp Leu Cys Ile Gly Ser Glu Arg Ser Leu  
65 70 75 80  
Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met  
85 90 95  
Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp  
100 105 110  
Ser Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met  
115 120 125  
Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu  
130 135 140  
Arg Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val  
145 150 155 160  
Ile Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg  
165 170 175  
Ser Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu  
180 185 190  
Ser Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn  
195 200 205  
Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg  
210 215 220  
Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg  
225 230 235 240  
Val Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala  
245 250 255  
Ser Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu  
260 265 270  
Gln Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp  
275 280 285  
His Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro  
290 295 300  
Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe  
305 310 315 320  
Ser Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser  
325 330

<210> 24  
<211> 431  
<212> PRT  
<213> Mus musculus

<400> 24

Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
1 5 10 15  
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
20 25 30  
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
35 40 45  
Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly  
50 55 60

Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His  
 65 70 75 80  
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg  
 85 90 95  
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys  
 100 105 110  
 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser  
 115 120 125  
 Leu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly  
 130 135 140  
 Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu  
 145 150 155 160  
 Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu  
 165 170 175  
 Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln  
 180 185 190  
 Lys Phe Leu Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala  
 195 200 205  
 Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala  
 210 215 220  
 Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu  
 225 230 235 240  
 Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser  
 245 250 255  
 Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn  
 260 265 270  
 His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys Ala  
 275 280 285  
 Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln  
 290 295 300  
 Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly Leu  
 305 310 315 320  
 Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala  
 325 330 335  
 Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu  
 340 345 350  
 Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu  
 355 360 365  
 Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val  
 370 375 380  
 Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg Asp  
 385 390 395 400  
 Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu  
 405 410 415  
 Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser  
 420 425 430

<210> 25  
 <211> 461  
 <212> PRT  
 <213> Mus musculus

<400> 25  
 Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly Arg Ala Cys  
 1 5 10 15  
 Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala  
 20 25 30  
 Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala  
 35 40 45  
 Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys  
 50 55 60

Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His  
 65 70 75 80  
 Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly  
 85 90 95  
 Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His  
 100 105 110  
 Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg  
 115 120 125  
 Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys  
 130 135 140  
 Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser  
 145 150 155 160  
 Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly  
 165 170 175  
 Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser  
 180 185 190  
 Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu Val  
 195 200 205  
 Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro  
 210 215 220  
 Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp Ser  
 225 230 235 240  
 Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met Asp  
 245 250 255  
 Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg  
 260 265 270  
 Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val Ile  
 275 280 285  
 Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg Ser  
 290 295 300  
 Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Ser  
 305 310 315 320  
 Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser  
 325 330 335  
 Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg Ser  
 340 345 350  
 Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg Val  
 355 360 365  
 Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser  
 370 375 380  
 Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu Gln  
 385 390 395 400  
 Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His  
 405 410 415  
 Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe  
 420 425 430  
 Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser  
 435 440 445  
 Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser  
 450 455 460

<210> 26  
 <211> 432  
 <212> PRT  
 <213> Mus musculus

<400> 26  
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
 1 5 10 15  
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
 20 25 30

Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
     35                  40                          45  
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp  
     50                  55                          60  
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu  
     65                  70                          75                          80  
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His  
     85                  90                          95  
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu  
     100                105                        110  
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly  
     115                120                        125  
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
     130                135                        140  
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu  
     145                150                        155                          160  
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His  
     165                170                        175  
 Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu  
     180                185                        190  
 Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser  
     195                200                        205  
 Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln  
     210                215                        220  
 Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro  
     225                230                        235                          240  
 Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser  
     245                250                        255  
 Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser  
     260                265                        270  
 Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Ser Lys  
     275                280                        285  
 Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys  
     290                295                        300  
 Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly  
     305                310                        315                          320  
 Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu  
     325                330                        335  
 Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser  
     340                345                        350  
 Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln  
     355                360                        365  
 Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His  
     370                375                        380  
 Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg  
     385                390                        395                          400  
 Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr  
     405                410                        415  
 Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser  
     420                425                        430

<210> 27  
 <211> 518  
 <212> PRT  
 <213> Mus musculus

<400> 27  
 Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
     1                  5                          10                          15  
 Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
     20                25                        30

Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
     35                        40                                45  
 Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp  
     50                        55                                60  
 Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu  
     65                        70                                75                        80  
 Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His  
     85                        90                                95  
 Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu  
     100                       105                               110  
 Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly  
     115                       120                               125  
 Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro  
     130                       135                               140  
 Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu  
     145                       150                               155                        160  
 Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His  
     165                       170                               175  
 Leu Cys Asn Tyr Ala Cys Arg Arg Asp Ala Leu Thr Gly His Leu  
     180                       185                               190  
 Arg Thr His Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg  
     195                       200                               205  
 Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His  
     210                       215                               220  
 Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val Cys Pro Val Ile Lys  
     225                       230                               235                        240  
 Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly  
     245                       250                               255  
 Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys  
     260                       265                               270  
 Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser  
     275                       280                               285  
 Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr  
     290                       295                               300  
 Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly  
     305                       310                               315                        320  
 Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu  
     325                       330                               335  
 Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser  
     340                       345                               350  
 Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn  
     355                       360                               365  
 Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala  
     370                       375                               380  
 Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala  
     385                       390                               395                        400  
 Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro  
     405                       410                               415  
 His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu  
     420                       425                               430  
 Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val  
     435                       440                               445  
 Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg  
     450                       455                               460  
 Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His  
     465                       470                               475                        480  
 Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr  
     485                       490                               495  
 His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu  
     500                       505                               510

His Arg Tyr His Leu Ser  
515

<210> 28

<211> 390

<212> PRT

<213> Mus musculus

<400> 28

Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu  
1 5 10 15  
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro  
20 25 30  
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys  
35 40 45  
Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly  
50 55 60  
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His  
65 70 75 80  
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg  
85 90 95  
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Ile Lys  
100 105 110  
Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly  
115 120 125  
Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys  
130 135 140  
Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser  
145 150 155 160  
Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr  
165 170 175  
Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly  
180 185 190  
Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu  
195 200 205  
Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser  
210 215 220  
Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn  
225 230 235 240  
Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala  
245 250 255  
Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala  
260 265 270  
Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro  
275 280 285  
His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu  
290 295 300  
Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val  
305 310 315 320  
Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg  
325 330 335  
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His  
340 345 350  
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr  
355 360 365  
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu  
370 375 380

His Arg Tyr His Leu Ser  
385 390

<210> 29  
<211> 376  
<212> PRT  
<213> Mus musculus

<400> 29

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				20				25					30		
Val	Pro	Glu	Asp	Leu	Ser	Thr	Thr	Ser	Gly	Ala	Gln	Gln	Asn	Ser	Lys
		35				40						45			
Ser	Asp	Arg	Gly	Met	Ala	Ser	Asn	Val	Lys	Val	Glu	Thr	Gln	Ser	Asp
	50			55					60						
Glu	Glu	Asn	Gly	Arg	Ala	Cys	Glu	Met	Asn	Gly	Glu	Glu	Cys	Ala	Glu
	65			70					75				80		
Asp	Leu	Arg	Met	Leu	Asp	Ala	Ser	Gly	Glu	Lys	Met	Asn	Gly	Ser	His
	85								90				95		
Arg	Asp	Gln	Gly	Ser	Ser	Ala	Leu	Ser	Gly	Val	Gly	Gly	Ile	Arg	Leu
	100							105					110		
Pro	Asn	Gly	Lys	Leu	Lys	Cys	Asp	Ile	Cys	Gly	Ile	Val	Cys	Ile	Gly
	115					120						125			
Pro	Asn	Val	Leu	Met	Val	His	Lys	Arg	Ser	His	Thr	Gly	Asp	Lys	Cys
	130					135					140				
Leu	Ser	Asp	Met	Pro	Tyr	Asp	Ser	Ala	Asn	Tyr	Glu	Lys	Glu	Asp	Met
	145					150				155			160		
Met	Thr	Ser	His	Val	Met	Asp	Gln	Ala	Ile	Asn	Asn	Ala	Ile	Asn	Tyr
							165			170			175		
Leu	Gly	Ala	Glu	Ser	Leu	Arg	Pro	Leu	Val	Gln	Thr	Pro	Pro	Gly	Ser
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Ser	Glu	Val	Val	Pro	Val	Ile	Ser	Ser	Met	Tyr	Gln	Leu	His	Lys	Pro
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Pro	Ser	Asp	Gly	Pro	Pro	Arg	Ser	Asn	His	Ser	Ala	Gln	Asp	Ala	Val
	210					215					220				
Asp	Asn	Leu	Leu	Leu	Leu	Ser	Lys	Ala	Lys	Ser	Val	Ser	Ser	Glu	Arg
	225					230				235			240		
Glu	Ala	Ser	Pro	Ser	Asn	Ser	Cys	Gln	Asp	Ser	Thr	Asp	Thr	Glu	Ser
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Asn	Ala	Glu	Glu	Gln	Arg	Ser	Gly	Leu	Ile	Tyr	Leu	Thr	Asn	His	Ile
	260					265					270				
Asn	Pro	His	Ala	Arg	Asn	Gly	Leu	Ala	Leu	Lys	Glu	Glu	Gln	Arg	Ala
	275					280					285				
Tyr	Glu	Val	Leu	Arg	Ala	Ala	Ser	Glu	Asn	Ser	Gln	Asp	Ala	Phe	Arg
	290					295					300				
Val	Val	Ser	Thr	Ser	Gly	Glu	Gln	Leu	Lys	Val	Tyr	Lys	Cys	Glu	His
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Cys	Arg	Val	Leu	Phe	Leu	Asp	His	Val	Met	Tyr	Thr	Ile	His	Met	Gly
							325		330				335		
Cys	His	Gly	Cys	His	Gly	Phe	Arg	Asp	Pro	Phe	Glu	Cys	Asn	Met	Cys
	340					345						350			
Gly	Tyr	His	Ser	Gln	Asp	Arg	Tyr	Glu	Phe	Ser	Ser	His	Ile	Thr	Arg
	355					360					365				
Gly	Glu	His	Arg	Tyr	His	Leu	Ser								
	370					375									